

IN THE CLAIMS:

The following listing of claims replaces all prior claim versions and listing:

1. (Currently amended) A semiconductor wafer ID recognition apparatus comprising:

image sensing optical means for reading ~~at least one~~ a plurality of identification information character ~~string (ID)~~ strings (IDs) marked at an arbitrary position on a semiconductor wafer in accordance with a plurality of first read optical conditions registered in advance; and

recognition processing means for performing recognition processing including calculation of an evaluation score representing a read likelihood ratio for an image output from said image sensing optical means for every read optical condition, and for adopting a recognition result for the character string exhibiting the highest score as an ID of the semiconductor wafer under the read optical condition, the highest score being adopted only if it is at least equal to a predetermined minimum score,

wherein said recognition processing means performs recognition processing for a corresponding ID among a plurality of IDs recorded on the semiconductor wafer in accordance with the first read optical conditions, and adopts, as the ID of the semiconductor wafer, a recognition result under a read optical condition exhibiting the highest score obtained by recognition processing under all the first read optical conditions.

2. (Canceled)

3. (Original) An apparatus according to claim 1, further comprising informing means for generating a warning when no ID can be recognized by recognition processing under the first read optical conditions.

4. (Original) An apparatus according to claim 1, further comprising input means for manually inputting an ID when no ID can be recognized by recognition processing under the first read optical conditions.

5. (Original) An apparatus according to claim 1, wherein
said image sensing optical means executes retry processing of performing ID recognition in accordance with a plurality of second read optical conditions different from the first read optical conditions when no ID can be recognized under the first read optical conditions, and

said recognition processing means adopts, as the ID of the semiconductor wafer, a recognition result under a read optical condition where an evaluation score is not less than an acceptable score and is the highest.

6. (Original) An apparatus according to claim 5, further comprising informing means for generating a warning when no ID can be recognized by retry processing under the second read optical conditions.

7. (Original) An apparatus according to claim 5, further comprising input means for manually inputting an ID when no ID can be recognized by retry processing under the second read optical conditions.

8. (Original) An apparatus according to claim 5, wherein said recognition processing means determines that no ID can be recognized when an evaluation score is under a predetermined value or when an indistinct character exists in a character string of a recognition result.

9. (Previously Presented) An apparatus according to claim 1, wherein said image sensing optical means comprises:

a light source which is arranged to irradiate an ID on the semiconductor wafer and changes in irradiation condition in accordance with the first read optical conditions; and

image sensing means for reading the ID on the semiconductor wafer irradiated by said light source, and

said recognition processing means comprises:

read optical condition memory means for storing the first read optical conditions;

light source control means for controlling said light source so as to set the first read optical conditions stored in said read optical condition memory means;

ID recognition processing means for performing recognition processing for each of images obtained under the first read optical conditions, calculating an evaluation score for each read optical condition, and storing a recognition result and the evaluation score; and

determination processing means for adopting, as the ID of the semiconductor wafer, a recognition result which is stored in said ID recognition processing means and is obtained under a read optical condition exhibiting the highest evaluation score.

10. (Previously Presented) An apparatus according to claim 9, wherein said ID recognition processing means comprises:

a recognition unit for performing recognition processing for each of images obtained under the first read optical conditions;

an evaluation unit for calculating an evaluation score for each read optical condition in accordance with an recognition result of said recognition unit; and

a memory for storing the recognition result of said recognition unit and an evaluation result of said evaluation unit.

11. (Original) An apparatus according to claim 1, further comprising transfer means for transferring the semiconductor wafer to a predetermined position on the basis of the ID adopted by said recognition processing means.

12. (Original) An apparatus according to claim 1, wherein

the ID includes a first ID formed from code information and a second ID formed from character/numeral information, and

said recognition processing means performs digital recognition processing of the first ID, and when no code can be recognized, performs analog recognition processing of the second ID.